

GENERAL AND REVENUE SECRETARIAT

(Genl. misc)

Reg. no 5 of 1910 - 11

NOTES.

File. No. 254 -

FILE HEADING.

Inventor for "An improved process for extracting gold from refractory ores" by Messrs Robert Dary, Fred Dary, John David Mackenzie & C.S. Bontramm

From

Messrs De Penning & De Penning, Calcutta

No. .

Dated

6-4-11

Received

10-4-11

Diary No. 431 } }

Enclos. 2 Spare Copies. { }

Serial No. 1

BRIEF ABSTRACT OF LETTER.

Forward an applⁿ from Messrs Rob & Fred Dary & for leave to file a specification of their invention & request that the sum of Rs 10 forwarded with G.O. 1886-10-5, may be utilised for this purpose

NOTES AND ORDERS.

1. Two afs mtd.

2. 1/5 (1251)
6-4-11 for

2. Issue for
1574/11

4572
4959

Serial
No.

2 To the Asstt Compt^r, State Treasury. N^o. 6078 of 20.4.11.
Forwards for deposit the sum of Rs. 10/- rec^d. with the
above & requests acknowledgment

3 To the State Geologist. N^o. 6079 of 20.4.11.
Forwards for report the applⁿ rec^d. with the above

4 From the Asst^t Compt^r in charge. S. H. Jy. no 483 of
21.4.11. Acknowledges receipt of the sum sent with Sl. 2.
3. Reply to 3 may be awaited.

By (115) JS-41 vs 102
27.4.11 27.4.11

Ans

5 From the State Geologist no 2345 of 20.5.11
with ref^{ce} to Sl. 3. forwards copy of report of
13.5.11 from the Chief Inspector of Mines
stating that the invention contains few
novel features and suggesting an enquiry
as to whether patent right has been
granted in any other ~~foreign~~ country.
4 Draft enquiry is sub^d.

By 102 102
29.5.11 29.5.11

6 To Messrs De Penning De Penning, Calcutta. N^o. 67054
of 1.6.11
With ref^{ce} to Sl. 1, enquires whether a similar
applⁿ has been made in British India, United
Kingdom or any other country & if so, requests the
furnished with a certified copy of the order.

Ans

7 From the same. N^o. 204 of 22.7.12.

With ref^{ce} to the above, states that they were unable to

8543
701

Serial
No.

ascertain if any corresponding appln for patent has been made in any other country.

6 Draft subd

9/99
30-7-12 VS. 41

7 Issue

30-7-12

gms

8 To the State Geologist, No. G. 601 of 1. 8. 12 -
With refce to Sl. 5, communicates the contents of the above enquiries whether leave to file the Specifi-
may be granted.

9 From the same. No. 323 of 3. 8. 12.

With refce to the above, requests that the Specifi-
and other papers relating to the invention may be forwarded
to him.

8 Draft subd

9/99
6-8-12 VS. 41

9 Issue

30-8-12

gms

10 To the State Geologist, No. G. 860 of 13. 8. 12
— Id as requested in the above, the Specifi-
fication & the papers refd to therein

11 From the above. No. 536 of 17. 8. 12.

In reply to Sl. 8, states that the specification
contains several points of novelty in the extraction
of gold from refractory ores but that he is unable
to say in what way the processes claimed ~~to~~
are rational or likely to be of use, and reports that
there is no objection to the grant of the leave applied

D 994

Serial
No.

applied for, as the claims do not trespass upon existing patents or processes.

10. Submitted for orders. The utility of this invention, about which the State Geologist expresses his doubts, appears to be a necessary condition for the grant of exclusive privilege (Vide Sec 20 (a) of the Mysore Inventions & Designs Reg., Copy put up). ~~However~~, If approved, Branch III may also be consulted if the leave to file ^a the specification of the invention may be granted.

Subd.

9A99
21.8.12 VS. 41

11. Invite the State Geologist's attention to the provision contd in to Sec 20 (a), ~~and~~ and ask whether in his opinion it may be availed of, & the leave refused, in view of the remarks contd in his letter ~~about~~ expressing a doubt ^{as to} how far 'the claims processes claimed are rational or likely to be of use'.

102
22/8/12

12 Draft subd

9A99
23.8.12 VS. 41

13

Issue 102

12 To the State Geologist, No. 1221 of 30.8.12 —
With refce to the above, invites his attention

2/327

Serial
No.

to the provision contained in Sec. 20 (a) of the
In. I. & O. Regs. II of 1894 & enquires whether the
provision may be availed of & the leave to file the
specification refused.

- 13 From the State Geologist. no 679 & 4. 9. 12.
In reply to the above, states that ^{what he meant was that} he is
unable to say if the invention is of ^{not} utility,
and that the leave applied for should be granted.

14 Draft subd for approval or other order.

2/12/12 12.9.12 15.41

15. May be approved

18th Council

13.9.12

818.

16 Draft appd: by 1st Councilor
M. J. P.

16.9.12

23
17/9

17. Issue

17.9.12

14. To Robert Davy & 3 others of Johannesburg, Transvaal,
no G. 1779 of 20.9.12 - Authorizes them to file
a specification of their invention refd to.

15 To Messrs De Koning & De Koning, no G. 1780
of 20.9.12 - To the above for communication
to the parties concerned.

SWP

Serial
No.

2407

16 From Messrs De Penning & De Penning, Ds 31. 10. 12.

Forwards Rs 30/- for filing the specification
and also 4 copies of the specifi.18 The amount has been received within the
prescribed period of 6 months from the date of
the Order authorising the filing of the specifi-
cation (i.e. 20th Sept. 1912) and therefore in
time19 The usual drafts are subd. The draft
and fair of the Govt Order require signature.9A99
7.11.12 VS. 41B/K
7/11

20 (ds.)

21 Issue

102
12.11.12

17. To the Compiler, Mysore Gazette, No. G. 2614 of 16.11.12 -
Notifies the filing of the above specification.
18. To Messrs De Penning & De Penning, No. G. 2615 of
16.11.12 - I.D. a copy of the above notice & returns
Sl. 14 with the certificate at foot duly filled up & signed.
19. To the D.C. Sd. Dept. Bangalore, No. G. 2616 of
16.11.12 - I.D. Rs 30/- received with Sl. 16 & requests
acknowledgment
20. To the State Geologist, Sd. Govt. Museum &
Chief Engineer, No. G. 2617-18 of 16.11.12 - I.D. a
copy of the specification & requests acknowl-
edgment

Serial
No.

21 From the State Geologist. No 1182 & 19. 11. 12

22 " Supdt, Govt Museum. No 447 & 21. 11. 12.

Acknowledge the receipt of the specimens forwarded with the above.

22. Replies from the D.C. and the Chief Engineer may be awaited.

Subd

9/11/12

26.11.12

yes

hm

27.11.12

23 From the Chief Engineer. No 9611 & 26. 11. 12

Acknowledge the receipt of the specimen forwarded with Sl. 20.

23. As an acknowledgment is due from the Treasury for the receipt of the amount forwarded with Sl 19, a draft reminder is put up for approval or other orders.

Subd

9/11/12

2/12/12

To the Cash Section for kindly stating if any receipt of acknowledgment has been received with refce to Sl. 19 above

VS

3-12-12

2/12/12

Subd. 3-12-12

24. The receipt of acknowledgment in question does not appear to have come to this Secy.

B.P.

4.12.12.

G. M. File No. 254 of 191⁰-¹¹/₁₂Serial
No.27 Br I Diaried- will kindly Veri-
fy the above 8th
11/1228 The receipt does not ap-
pear to have been received
in the Branch and is
not traceable in the
Diary29 The draft reminder
put up may therefore
be approved.

VS

5-12-12-30 Issued

m.
5/12/12

Issued No G. 3164 dt 9-12-12.

24 From the D.C. Hy, Bangalore. No. 126 dt 11-12-12.

Acknowledges the receipt of the amount forwarded
with Rs 19.

31 The case may now be filed.

Subd

5499

12-12-12

VS

File

m.
13/12/12

19 Watkins Lane, Howrah

24317
6th April 1911

G.M. 254-10-1

To

The Secretary to the Government
of H. H. The Maharaja of Mysore
General & Revenue Departments

Sir

We have the honour to enclose herewith
an application from Robert Davy, Frederick
Davy, John David Mackenzie, and Clement
Stanhope Bertram, for leave to
file a specification of an Invention
for "An improved process for
extracting gold from refractory ores"

We have forwarded with our letter
dated 20th January 1911 a fee of Rs 10/- &
shall feel obliged by your utilizing same
as fee in this case, vide also your
letter No G 4502 Dated 28th January 1911,
G.M. 148-10-6

Second Para. We shall feel obliged
by the order passed on this case being
sent to us in due course.

We have the honour to be
Sir

Your most-obedient servants
De Penning & De Penning



POWER OF ATTORNEY.

In the matter of the Inventions and Designs Regulations, 1894,, of the Government of Mysore and in the matter of ROBERT DAVY, of Natal Spruit, near Johannesburg, Transvaal, Chemist, FREDERICK DAVY, of Natal Spruit, aforesaid,, Smelter,, JOHN DAVID MACKENZIE, of 50 Garden Street, Rosettenville, near Johannesburg, aforesaid,, Speculator,, and CLEMENT STANHOPE BERTRAM, of Amphill Avenue,, Benoni, Transvaal, Managing Director.

We,, the abovenamed Robert Davy, Frederick Davy,, John David Mackenzie, and Clement Stanhope Bertram, do hereby retain, constitute and appoint *Mr Lionel A. Debenning and Harold A. Debenning*, both of Messrs Debenning & Debenning, Patent Agents, Calcutta

as our Agents and Attorneys to apply for and obtain from the Government of Mysore and keep in force an Exclusive Privilege or Letters Patent for An improved process for extracting gold from refractory ores,, and we authorise *them* to sign our names to such papers and writings and do such acts regarding the same, including the appointment of a substitute or substitutes, as may be necessary or expedient..

Dated this ninth day of February 1911..

Signed, Sealed and
Delivered at
Johannesburg,,
Transvaal, in the
presence of:-

Charles Overdale
Patent Agent,
Steytler's Building,
Loveday Street,
Johannesburg,
Transvaal.

Robert Davy
Frederick Davy
John David Mackenzie
C. I. Robb
Clement Stanhope Bertram

Maud Pope
Typist
Steytler's Bldg
Loveday St
Johannesburg
Transvaal



Money & cover if any
4317
17-4-
21/4/11
G.R.S. 26]
21/4/11
on 23.1.11

21/5

3

File No. 254-10

Serial No. 2

Diary No. of letter replied to

No. G 6078 with B of - of

General and Revenue Secretariat

()
, the .19

To

Ass^H Compt^r in charge

of the S. H. J. J.

Date of issue 20. 4. 11

Signed by Mr. B. Ramanamaya

Has the honor to forward
herewith for credit into the

Treasury a sum of Rs 10/- being the
application fee in respect of an

invention for "An improved process
for extracting gold from refractory

ores" by Messrs Robert Dargy, Frederick
John David Mackenzie & Clement

Stanhope Bertram & to request the

favor of an order.

SUBJECT.

Copy 21/4/11

1574/4
In C. H. Secy

has

4317
17-4-11

G.R.S. 26]

21/5

(4)

File No. 254-10

Serial No. 3

Diary No. of letter replied to _____

No. C 6079 Enc 1

General and Revenue Secretariat
()
, the 19 . }

To

The State Geologist

Date of issue 20. 4. 11

Sir,

Signed by Mr. R. Ramaswamaya

I am directed to

Return requested

X

forward herewith for enquiry &
report under Part I of the
Mysore Inventions & Designs Regl.
no XI of 1894 an application
from Messrs Robert Darg, Frederick
Darg, John David Mackenzie &
Clement Stanhope Benham for
leave to file a specification of an
invention for "An improved process
for extracting gold from refractory ores".

SUBJECT.

C6079
1911

Shaved.
1574/11
D. G. H. te
bus

6

V. C. S. 20/4/24

84512
G

Gen 254-10-4

No. 1483

Pos. 10/-

Received from the Secretary to the Government of His Highness the Maharaja of Mysore, General & Revenue Department the sum of Rupees Ten only being the application fee in respect of an invention and credited this day as directed vide his No. G 6078 of June 25-10-2
Dated 20 Instant

H. H. THE MAHARAJA'S STATE HUZUR TREASURY,
BANGALORE the 21 April 1911

By Order,

Alurama, am The
Asst Comptroller in Charge
Treasury Officer, State Huzur Treasury.

Exd.

Hd. Acctf.

Bakshi
Treasurer

M.G.D. 13]

MYSORE GEOLOGICAL DEPARTMENT. 6

Dated Bangalore, 20th May 1911.

\$ 4959
e.

S. N. 254. 10-5

No. 2345-
Encls. two

From

E. W. WETHERELL, Esq., A.R.C.S., F.R.P.S.L., F.G.S.,

Offg. State Geologist in Mysore.

To

C.S. Balasundaram Iyer, Esquire, B.A.,

Orig. Secretary to the Government of His Highness
the Maharaja of Mysore, Genl. and Rev. Depts.

SIR,

In reply to your letter No. G.6079/G.M. 254-10-3, dated 20th April 1911, forwarding for enquiry and report the application from Messrs. Robert Davy, Frederick Davy, John David Mackenzie and Clement Stanhope Bertram for leave to file a specification of an invention for "An improved process for extracting gold from refractory ores", I have the honour to forward herewith a copy of report, dated 13th May 1911, received from the Offg. Chief Inspector of Mines on the subject.

2. The specification is herewith returned.

I have the honour to be,

Sir,

Your most obedient servant,

H. Subbarao

Offg. State Geologist in Mysore.

Report on an application from Messrs. R. and F. Davy, J.D. Mackenzie and C.S. Bertram for leave to file a specification of an invention for "An improved process for extracting gold from refractory ores".

(1) The claims put forth by the applicants appear to possess few novel features, although the process may be an improvement on others in certain respects - percentage of extraction for instance.

(2) It would be interesting to ascertain whether the application has been granted in other countries, before leave is given to file the specification in this State.

Oorgaum,
13th May 1911.

Signed/ R. Bocquet ,
Offg. Chief Inspector of
Mines in Mysore.

Copy.

R. M. Bocquet

J. M. Offg. State Geologist in Mysore.

J. M.

A P P L I C A T I O N

TO THE DEWAN OF MYSORE

The application of ROBERT DAVY, of Natal Spruit, near Johannesburg, Transvaal, Chemist, FREDERICK DAVY, of Natal Spruit, aforesaid, Smelter, JOHN DAVID MACKENZIE, of 50 Garden Street, Rosettenville, near Johannesburg, aforesaid, Speculator, and CLEMENT STANHOPE BERTRAM, of Amphill Avenue, Benoni, Transvaal, Managing Director, for leave to file a Specification under Part 1 of the Mysore Inventions and Designs Regulation, 1894.

1. The Applicants are in possession of an invention for "An improved process for extracting gold from refractory ores" the said Robert Davy is the inventor thereof: and, to the best of their information and belief, the invention is new within the meaning of Part 1 of the Mysore Inventions and Designs Regulation, 1894, and no circumstance exists which, if the applicants are authorized to file a specification and file it in accordance with that Part, will disentitle them to an Exclusive Privilege thereunder in respect of the invention. No application for a patent in respect of this invention has been made either in the United Kingdom or in British India.

2. The following is a description of the invention:-

YV
G.R.S. 26]

X
File No. 254-10
Serial No. 6

4959
36/5
Diary No. of letter replied to

No. G7054

General and Revenue Secretariat

()
, the 19 .

To

Messrs De Penning & De Penning

Patent Agents, 19 Watkin's Lane

Shornah, Calcutta.

Date of issue 1. 6. 11

Signed by Mr. Rameswami

Gentlemen,

With refer to the

appl^y of messrs Robert & Frederick

Dary, ~~and messrs~~ and two others

f & 9.2.1911 for leave to file a

specification of their invention for

"An improved process for extracting
gold from refractory ores", which

was forwarded with your letter of

6.4.1911, I am directed to

over.

SUBJECT.

2/1
10/1

request you to be so good as
to ascertain and report whether
leave to file specification has
since been applied for and
obtained in the British India,
the United Kingdom or any
other country. If so, a ^{certified} copy
of the order granting the
leave may kindly be furnished.

Shavek.

29-5-11
2 Cotts Secy

W.

List of enclosures,

Copied by

Examined by

V
26-7-12
20h.
GA

5, Commercial Buildings
Chive Street
Calcutta 11
543
DIARY No. 22nd July 1912

1912-1913
SECTION Gen. - mis
FILE No. 254 of 1910-11
SERIAL No. 7

To The Secretary to the Government of
Mysore
Genl & Rev Departments
Bangalore

Sir,

re - Application for Mysore Patent
Davy, Davy, Mackenzie & Bertram
(Appl filed in April 1911)

We have the honour to request
that orders may be passed on this
application for Mysore Patent.

We have been unable to ascertain
if any corresponding application for
Patent has been made in any other country.

We have the honour to be

Sir
Your most obedient servants
D. Penning - D. Penning

2
G.R.S. 26]

317

Diary No. of letter replied to 543

General and Revenue Secretariat

()
the 19

Date of issue 1-8-12

Signed by M. B. Ramaswamiya
R 5

8m File No. 254-10

Serial No. 8

Q. 601
No. 601

To

The State Geologist in Mysore.

Sir,

With reference to your letter
No. 2345 dated the 20th May 1912,
forwarding copy of the Report of
the Offg Chief Inspector of Mines
regarding the application from Messrs
Robert Davy, Frederick Davy, John
David Mackenzie & Clement
Stanhope Bertram for leave to
file a specification of their in-
vention for "An Improved Process
for extracting gold from refractory

over.

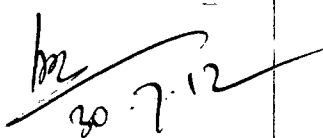
SUBJECT.

Msu 317

(1)
ores", I am directed to state that
the Agents of the Inventor in India,
Messrs De Penning & De Penning, Calcutta,
intimate that they ~~are~~ ^{have been} unable
to ascertain if any corresponding
application for patent has been made
in any other country. I am therefore
to enquire, whether ~~under the Act~~ ^{the Act},
the leave to file a specification of
the said invention ^{in Mysore} may be granted.

2. An early reply is requested.

I have &c,


30.7.12
For the Secretary
VS. 41

List of enclosures,

Copied by

Examined by .

DIARY No. 701....

12/2-1913
SECTION *for: mis*
FILE No. 254 of 1910-11
SERIAL No. 9
MYSORE GEOLOGICAL DEPARTMENT.

Dated Bangalore 3rd August 1912

No. 323

From

DR. W. F. SMEETH, M.A., D.SC., etc.,

State Geologist in Mysore.

To

K.R. Srinivasaiengar, Esquire, M.A.,

Offg. Secretary to the Government of His High-

ness the Maharaja of Mysore, Gen. & Rev. Dep't

SIR.

With reference to your letter No.G.601/G.M.254-10-8, dated 1st August 1912, I have the honour to request that the specification and other papers relating to the Invention referred to may be kindly sent for reference.

I have the honour to be,

Sir,

Your most obedient servant,



State Geologist in Mysore.

C.N.

11-
X
7a
8a

G.R.S. 29A]

G.M. 254-10
19 . sk. 10.

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The State Geologist in Mysore.

Dated

Despatched /3. 8-12

Received

General No. G. 860.

No. G.M. 254-10-10.

Enclosure No. /

As requested in his letter
No. 323, dated the 3rd August
1912, has the honor to forward
herewith the specification and
other papers relating to the
invention for "An improved
process for extracting gold from
refractory ores" by Messrs R. Davy,
F. Davy, J.D. Mackenzie and C. S.
Bertram.

By order,

[Signature]
J.D. 12
For the Secretary.

VS. 41

6/11
19/8
M.G.D. 13]

MYSORE GEOLOGICAL DEPARTMENT,
DATED BANGALORE, 17th August 1912.

No. 536
Encl. 1 file

DIARY No. 994

10/2-18/3
SECTION <i>gen: mis</i>
FILE No. 254 of 1910-11
ORIGINAL No. 11

From

DR. W. F. SMEETH, M.A., D.SC., A.R.S.M., etc.,
State Geologist in Mysore.

To

K.R. Srinivasalingar, Esquire, M.A.,

Offg. Secretary to the Government of His Highness
the Maharaja of Mysore, Gen. & Rev. Depts.

Sir,

In reply to your letter No.G.601/G.M.259-10-8, ⁴

dated 1st August 1912, I have the honour to state that the specification therein referred to contains several points of novelty in the extraction of gold from refractory ores. I am quite unable to say in what way the processes claimed are rational or likely to be of use, but, as the claims do not, so far as I am aware, trespass upon existing patents or processes, I see no objection to the leave applied for being granted.

2. The papers forwarded with your docket No. 9860 /

G.M.

7
G.M.254-10-10. dated the 13th August 1912 are herewith returned.

I have the honour to be,

Sir,

Your most obedient servant,

A handwritten signature in cursive script, appearing to read 'A. Smith', with a large, stylized flourish at the end.

State Geologist in Mysore.

C.N.

G.R.S. 26]

(18)
Gm File No. 254-
10
Serial No. 12

Diary No. of letter replied to 994

No. G. 12 21

General and Revenue Secretariat

()
, the 19 .)

To

The State Geologist in Mysore

Sir,

Date of issue 30-8-12

With refce to your letter n^o.

Signed by Mr B. Ramaswami 536 dated the 17th August 1912,

reporting on the application
of Messrs R. Davy, F. Davy, J.D. Mack
Kenzie and C. S. Berham for
leave to file a specification of
their invention for "an improved
process for extracting gold from
refractory ores," I am directed
to invite your attention to the
provision contained in Sec 20(a)

over.

SUBJECT.

29/8/12

of the Mysore Inventions and Designs
Regulation XI of 1894 and to request
to be informed whether, in your
opinion, the ~~pro~~ said provision
may be availed of and the leave
to file the specification refused,
in view of the remarks contained
in your letter under reply expressing
as to
a doubt how far "the processes claimed
are rational or likely to be of use".

2. The enclosures are returned
for reference and re-transmission
along with your reply.

I have &c,

29/8/12

For the Secretary -

VS. 41

List of enclosures,

Copied by 115
Examined by 29/8/12

V. 99
M.G.D. 13]

'MYSORE GEOLOGICAL DEPARTMENT,
DATED BANGALORE, 4th September 1912.

No. 679
Encl. 1

DIARY No. 1327

From

DR. W. F. SMEETH, M.A., D.Sc., A.R.S.M., etc.
State Geologist in Mysore.

10/2-10/13
SECTION <i>for: mis</i>
FILE No. 254 of 1910-11
SERIAL No. 13

To

K.R. Srinivasalingar, Esquire, M.A.,

Offg. Secretary to the Government of His Highness
the Maharaja of Mysore, Gen. & Rev. Depts.

Sir,

In reply to your letter No.G.1221/G.M.254-10-12,
dated 30th August 1912, I have the honour to inform you
that my observation regarding the specification referred to,
that I was "quite unable to say in what way the processes
claimed were rational or likely to be of use" should not be
interpreted to mean that the invention is of no utility.
I am unable to say that this is the case and I have already
stated that I see no objection to the leave applied for
being granted and I think it should be granted.

2. The papers received with your letter under
reply are herewith returned.

I have the honour to be,

Sir,

Your most obedient servant,

GPB-400-21-6-10

C.N.

W. F. Smee
State geologist in Mysore.

181

This invention relates to the extraction of gold from refractory ores.

It has for its object to effect a more complete extraction of the precious metal from such ores than has hitherto been attained by the known processes or modes of treatment.

According to the methods at present generally adopted for recovering gold from pyritic or refractory ores, the ore is roasted or heated in such a way as to allow the volatile products or gases thereby produced to escape or pass off readily from the ore, usually into the atmosphere.

W.D. Now according to ^{our} ~~my~~ invention the ore (which has previously been reduced to a suitable fine state of subdivision, concentrated to separate the pyritic or refractory matter for treatment, and such matter thereafter dried) is heated to a bright red heat in such a manner as to maintain the volatile products or gases thereby formed as far as is practicable in contact with the ore, and to completely exclude atmospheric air.

Although the heating of the ore in the manner just explained gives more or less satisfactory results, varying with the nature of the ore, we have obtained a still more complete extraction of the precious metal by intimately mixing or incorporating amorphous carbon, in the form of powdered charcoal, with the concentrated ore before heating it; and, when the ore does not contain a considerable amount of sulphur, we have ascertained that the addition of a quantity of powdered sulphur to the concentrated ore and powdered charcoal has considerably improved the extraction.

This invention relates to the extraction of gold

from refractory ores.

It has for its object to effect a more complete

extraction of the precious metal from such ores than

has hitherto been attained by the known processes and

modes of treatment.

According to the method as presently proposed

adopted for recovering gold from pyritic or iron pyritic

ores, the ore is roasted or heated in such a manner as

allow the volatile products or gases thereby produced to

escape or pass off rapidly from the ore, usually into

the atmosphere.

Now according to my invention the ore (which has

previously been reduced to a suitable form of fine or sub-

division, concentrated as regards the pyritic or

refractory matter for treatment, and each of the three

after dried) is heated to a bright red heat in such a

manner as to maintain the volatile products or gases

thereby formed as far as is practicable in contact

with the ore, and to completely exclude atmospheric

air.

Although the heating of the ore in the manner just

explained gives more or less satisfactory results,

varying with the nature of the ore, we have obtained

a still more complete extraction of the precious metal

by intimately mixing or incorporating amorphous carbon,

in the form of powdered charcoal, with the concentrated

ore before heating it; and, when the ore does not

contain a considerable amount of sulphur, we have

ascertained that the addition of quantity of powdered

sulphur to the concentrated ore and powdered charcoal

has considerably improved the extraction.

We have also discovered, in the case of ores containing iron pyrites, that by treating the resultant mass, whilst still hot, with a solution of common salt (sodium chloride) and in the case of ores containing copper pyrites with a solution of sal-ammoniac (ammonium chloride) the process is thereby rendered more satisfactory and complete.

In carrying out the invention the ore is first reduced in any suitable manner to the requisite degree of fineness and concentrated by any suitable means to separate therefrom the pyritic or refractory matter for treatment. The concentrated ore is thereafter dried in any convenient manner.

The now dry concentrated ore is placed in a suitable vessel or receptacle, which is thereupon closed. The closed vessel or receptacle is then placed in a furnace, or otherwise heated until its entire contents are brought to a bright red heat. The temperature attained must not be sufficient at any time to melt the charge in the vessel or receptacle. The vessel or receptacle is closed so as to confine therein, as far as is practicable, the volatile products or gases produced, in order to retain the same in contact with the material, and also to completely exclude atmospheric air. The closed vessel or receptacle is allowed to remain in the furnace for a period of 48 (forty-eight) hours more or less.

After the expiration of this period the vessel or receptacle is taken out of the furnace and the residue of the charge removed therefrom, and treated in order to extract its gold contents in any suitable manner.

We have also discovered, in the case of acid con-
taining iron pyrites, that by treating the material
mass, whilst still hot, with a solution of common salt
(sodium chloride) and in the case of ores containing
copper pyrites with a solution of ammonium carbonate
(ammonium carbonate) the process is thereby rendered more effec-
tive and complete.

In carrying out the invention the ore is first
reduced in any suitable manner to the requisite degree
of fineness and comminuted by any suitable means to
separate therefrom the particles of refractory matter
for treatment. The comminuted ore is then
dried in any convenient manner.

The new dry comminuted ore is placed in a suitable

vessel or receptacle, which is then placed in a furnace.
closed vessel or receptacle is then placed in a furnace,
on otherwise heated until the entire contents are
brought to a bright red heat. The furnace is then
must not be sufficient at any time to melt the charge
in the vessel or receptacle. The vessel or receptacle
is closed so as to confine therein, as far as is
practicable, the volatile products or gases produced,
in order to retain the same in contact with the
material, and also to completely exclude atmospheric
air. The closed vessel or receptacle is allowed to
remain in the furnace for a period of 48 (forty-eight)
hours more or less.

After the expiration of this period the vessel
or receptacle is taken out of the furnace and the residue
of the charge removed therefrom, and treated in order
to extract the gold contents in any suitable manner.

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As has been previously explained, we have discovered that the efficacy of the process is increased, and the subsequent treatment of the residue to recover its gold contents is facilitated in the case of ore containing iron pyrites by treating the residue or mass after it has been removed from the vessel or receptacle with a solution of common salt (sodium chloride) and in the case of ore containing copper pyrites with a solution of sal-ammoniac (ammonium chloride), the mass or residue being treated therewith whilst it is sufficiently hot to evaporate said solution to dryness. The treatment of the residue with either of the aforesaid solutions may be effected by sprinkling the solution upon the mass.

The mass can now be treated for the recovery of its gold contents in any ordinary manner. It will now be found amenable to the ordinary processes for recovering gold from free-milling ores; that is to say, it can be reduced, and the free gold be recovered by amalgamation and or by the cyanide or other process of extracting gold from its ores.

Any portion of the charge which is found to have been insufficiently treated in the vessel or receptacle can be replaced therein for further treatment.

The solution of sodium chloride is made by adding approximately 10 (ten) pounds of salt to 50 (fifty) gallons of water, and the solution of sal-ammoniac (ammonium chloride) by adding 5 (five) pounds of sal-ammoniac to 50 (fifty) gallons of water; but these quantities may require to be varied according to the nature of the ore under treatment.

As has been previously explained, we have observed that the efficiency of the process is increased, and the subsequent treatment of the residue is reduced, if the contents is treated in the case of one containing iron pyrites by treating the residue on water after it has been removed from the vessel or receptacle which contains of common salt (sodium chloride) and in the case of one containing copper pyrites with a solution of sal-ammoniac (ammonium chloride); the mass of residue being treated therewith should be in sufficient quantity to evaporate said solution completely. The treatment of the residue with either of the aforesaid solutions may be effected by sprinkling the solution upon the

mass.

The mass can now be treated for the recovery of the gold contents in any ordinary manner. It will not be found amenable to the ordinary processes for recovering gold from free-milling ores; that is to say, it can be washed, and the free gold be recovered by amalgamation and on by the cyanide or other process of extracting gold from the ore.

Any portion of the charge which is found to have been insufficiently treated in the vessel or receptacle can be repeated therein for further treatment.

The solution of sodium chloride is made by adding approximately 10 (ten) pounds of salt to 50 (fifty) gallons of water, and the solution of sal-ammoniac (ammonium chloride) by adding 5 (five) pounds of sal-ammoniac to 50 (fifty) gallons of water; but these quantities may require to be varied according to the nature of the ore under treatment.

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When the ore is of such a nature as to render it desirable to mix charcoal with it before heating it- which will usually be determined by experiment -then the charcoal in a powdered form is used in a suitable quantity and intimately mixed or incorporated with the dry concentrated ore. The concentrated ore and powdered charcoal having been thoroughly mixed, the admixture is then placed in the vessel or receptacle, the latter then closed and placed in the furnace and the process carried out in the manner hereinbefore explained.

If the ore is found by experiment not to contain sufficient sulphur for its most effective treatment, then powdered sulphur in suitable quantity is thoroughly mixed with the concentrated ore and powdered charcoal, and the admixture thereafter placed in the vessel or receptacle and the latter then closed and the process completed in the manner previously explained.

In the experiments we have carried out we have obtained the best results by using for each ton of the concentrated ore 80 (eighty) pounds of sulphur and 80 (eighty) pounds of charcoal, but, obviously, these quantities may require to be altered to suit the particular ore to be treated.

Although we describe the use of a closed vessel or receptacle for holding the charge to be treated it is evident that when the concentrated ore is to be treated in large quantities it can be heated in a closed oven or retort and the vessel or receptacle be dispensed with.

The vessel or receptacle, or the oven or retort,

When the one is of such a nature as to render it desirable to mix charcoal with the substance which will usually be determined by experiment - then the charcoal in a powdered form is used in a quantity and intimately mixed or incorporated with the concentrated acid. The same method is employed in charcoal having been thoroughly mixed, the mixture is then placed in the vessel or receptacle, the latter then closed and placed in the furnace, and the process carried out in the manner heretofore explained.

If the one is found by experiment not to combine satisfactorily with the more effective treatment, then powdered sulphur in suitable quantity is thoroughly mixed with the concentrated acid and powdered charcoal, and the mixture thereafter placed in the vessel or receptacle and the latter then closed and the process completed in the manner previously explained.

In the experiments we have carried out we have obtained the best results by using for each ton of the concentrated acid 50 (weight) pounds of sulphur and 80 (weight) pounds of charcoal, but, obviously, these quantities may require to be altered to suit the particular one to be treated.

Although we describe the use of a closed vessel or receptacle for holding the charge to be treated it is evident that when the concentrated acid is to be treated in large quantities it can be heated in a closed oven or retort and the vessel or receptacle be dispensed with.

The vessel or receptacle, or the oven or retort,

may be provided with a non-return valve or equivalent device, which, whilst permitting the gases or volatile products therein produced to escape after a predetermined safe working pressure has been attained within the vessel, receptacle, oven or retort, will prevent the ingress thereinto of atmospheric air.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. The process for extracting gold from refractory ores which consists in heating the ore in such a manner as to maintain the volatile products or gases thereby produced in contact with the ore and to completely exclude atmospheric air, substantially as described.
2. The process for extracting gold from refractory ores as claimed in claim 1, in which amorphous carbon in the form of powdered charcoal is mixed with the ore before it is heated, substantially as described.
3. The process for extracting gold from refractory ores as claimed in claim 1 or claim 2, in which powdered sulphur is mixed with the ore or ore and charcoal, substantially as described.
4. The process for extracting gold from refractory ores, as claimed in claim 1, 2 or 3, in which the resultant mass whilst still hot is treated with a solution of sodium chloride or ammonium chloride, substantially as described.
5. The process for extracting gold from refractory ores, which consists in reducing the ore if necessary and concentrating the reduced ore to separate therefrom the pyritic or refractory matter for treatment, then drying said matter, then adding powdered sulphur and powdered charcoal to the matter and intimately mixing the same therewith, then heating the admixture to a bright

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red heat in such a manner as to maintain the volatile products or gases thereby produced in contact with the material and to completely exclude atmospheric air, then treating the resultant mass whilst, still hot with a solution of sodium chloride or ammonium chloride in which the various substances are used in substantially the proportions hereinbefore specified.

6. The process for extracting gold from refractory ores substantially as hereinbefore described.

3. The Applicants, therefore, apply for leave to file a Specification of the Invention pursuant to Part I of the Inventions and Designs ^{Regulation 1894} ~~Act 1888~~.

Robert D. Davy
Frederick. Davy
John David Mackenzie
Clement Stanhope Berkeley

We, the Applicants abovenamed, do declare that the facts stated in this Application are true to our knowledge, except as to matters stated on information and belief and as to those matters we believe them to be true.

Dated this ninth day of February 1911.

Robert D. Davy
Frederick. Davy
John David Mackenzie
Clement Stanhope Berkeley

28/11-21

G. 1779/G. M. 254 -10-14.

GOVERNMENT OF MYSORE
General Department.

Register No. 5 of 1900-11

Bangalore, the 20th Sept. 1902.

WHEREAS an application, dated the 9th February 1911 and received
on the 10th April 1911, has been submitted under Section 5 of the Mysore

Inventions and Designs Regulation, 1894, by Robert Davy of Natal Sprint, near

Johannesburg, Transvaal, Chemist, Frederick Davy of Natal Sprint aforesaid, Smelter,
John David Mackenzie of 50 Garden Street, Rosettenville near Johannesburg aforesaid, Speculator
and Clement Stanhope Bertram of Auntyhill Avenue, Benoni, Transvaal, Managing Director
(hereinafter referred to as "the applicant") for leave to file a specification of an

invention for "an improved process for extracting gold
from refractory ores"

And whereas the applicant has duly complied with all the requirements of
Section 5 of the said Regulation.

The Government of Mysore are pleased, under Section 6 of the said Regulation, to authorize the applicant to file a specification of the said invention in accordance with the provisions of the said Regulation.

ORDERED, that the applicant be, and he is hereby, informed accordingly.

By Order of the Government of Mysore,

[Signature]
16/9/12

[Signature]

[Signature]
13.9.12

[Signature] Secretary to the Govt. of Mysore,
Gen. and Rev. Depts.

[Signature] VS. 41

Certified that the fees prescribed in the fourth schedule to the Mysore Inventions and Designs Regulation, 1894, in respect of the application for leave to file the said specification and of the filing thereof have been paid by the applicant, and that the specification hereinbefore described has been duly filed in accordance with the provisions of Section 8 of the said Regulation on this the *Seventh* day of *November* 1902.

[Signature]

[Signature]
12-11-12

[Signature] Secretary to the Govt. of Mysore,
Gen. and Rev. Depts.

[Signature] VS. 41

[Signature] 7-11-12

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G.R.S. 26]

Diary No. of letter replied to 1327

General and Revenue Secretariat

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the 19 .

Date of issue 20-9-12

Signed by Mr. B. Ramaswami Gentleman,

7c N

To

Messrs De Penning & De Penning,

5, Commercial Building,

Clive Street, Calcutta.

With reference to con^{ee}

ending with your letter no. 204,

dated the 22nd July 1912, I am

directed to forward herewith

G.O. no. G. 1779 dated 20th Sept 1912
gm 254-10-14

authorizing Messrs Robert Davy,

Frederick Davy, John David

Mackenzie and Clement Stan-

hope Befram to file a specifi-
cation
over.

SUBJECT.

of their invention for "an improved
process for extracting gold from
refractory ores", and to request
that the same may be communicated
to the parties concerned.

I have re,

13/9/12

For the Secretary.

16/9/12

VS. 41

List of enclosures,

Copied by KZ
19/9/12
Examined by

DIARY No. 2407

242-1013
SECTION Gen. inv.
FILE No. 25408-1910-11
SERIAL No. 16

5. Commercial Buildings
(30) Calcutta.

31st October 1912.

To
The Secretary to the
Government of Mysore
General & Revenue Department

Sir

We have the honour to forward enclosed the Specifications of Robert Davy, Frederick Davy, John David Mackenzie, and Clement Stanhope Bertram for an Invention for "An improved process for extracting gold from refractory ores" under order no G. 1749/G.M. 254-10-14 dated 20th September/12 returned herewith.

We also forward the fee thereon of Rs 30/-/- and shall feel obliged by the certificate being returned to us completed in due course.

We have the honour to be
Sir

Your most obedient Servants
DePinning & DePinning
Patent Agents

~~18/12/19~~

S P E C I F I C A T I O N.

TO ALL WHOM IT MAY CONCERN.

Be it known that we ROBERT DAVY, of Natal Spruit, near Johannesburg, Transvaal, Chemist, FREDERICK DAVY, of Natal Spruit, aforesaid, Smelter, JOHN DAVID MACKENZIE of 50 Garden Street, Rosettenville, near Johannesburg, aforesaid, Speculator, and CLEMENT STANHOPE BERTRAM, of Amphill Avenue, Benoni, Transvaal, Managing Director, are in possession of an Invention for An improved process for extracting gold from refractory ores, and we the said Robert Davy, Frederick Davy, John David Mackenzie and Clement Stanhope Bertram, do hereby declare the nature of the said Invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof, that is to say:-

S E C R E T

TO ALL WHOM IT MAY CONCERN.

Be it known that on ROBERT DAY, of said State,
near Johannesburg, Transvaal, Rhodesia, Africa,
of said State, Rhodesia, Africa, and
of 30 Garden Street, Johannesburg, near Johannesburg,
Rhodesia, Africa, and JAMES HENRY, of
Ampthill Avenue, Rhodesia, Africa, Director,
and in possession of an invention for an improved
process for extracting gold from refractory ores, and
we the said Robert Day, John David
Weeks and Oliver Thomas, do hereby
declare the nature of said invention and in what
manner the same is to be performed to be particularly
described and ascertained in and by the following
statements thereof, that is to say:-

This invention relates to the extraction of gold from refractory ores.

It has for its object to effect a more complete extraction of the precious metal from such ores than has hitherto been attained by the known processes or modes of treatment.

According to the methods at present generally adopted for recovering gold from pyritic or refractory ores, the ore is roasted or heated in such a way as to allow the volatile products or gases thereby produced to escape or pass off readily from the ore, usually into the atmosphere.

Now according to our invention the ore (which has previously been reduced to a suitable fine state of subdivision, concentrated to separate the pyritic or refractory matter for treatment, and such matter thereafter dried) is heated to a bright red heat in such a manner as to maintain the volatile products or gases thereby formed as far as is practicable in contact with the ore, and to completely exclude atmospheric air.

Although the heating of the ore in the manner just explained gives more or less satisfactory results, varying with the nature of the ore, we have obtained a still more complete extraction of the precious metal by intimately mixing or incorporating amorphous carbon, in the form of powdered charcoal, with the concentrated ore before heating it; and, when the ore does not contain a considerable amount of sulphur, we have ascertained that the addition of a quantity of powdered sulphur to the concentrated ore and powdered charcoal has considerably improved the extraction.

This invention relates to the extraction of oil

from refractory ores.

It has for its object to effect a more complete
extraction of the precious metal from such ores than
has hitherto been attained by the known processes or
modes of treatment.

According to the methods at present in use
adapted for recovering gold from pyrites or other ores,
the ore is roasted or heated in such a manner as to
allow the volatile product or gases thereby evolved to
escape on pass off readily from the ore, usually into
the atmosphere.

Now according to our invention the ore is heated in a
previously been reduced to a suitable fine state of sub-
division, commencing first to separate the pyrites or
refractory matter for treatment, and each part of the
after dried) is heated to a bright red heat in such a
manner as to maintain the volatile products or gases
thereby formed as far as is practicable in contact
with the ore, and to completely exclude and prevent
air.

Although the heating of the ore in the manner first
explained gives more or less satisfactory results,
very dry with the nature of the ore, we have obtained
a still more complete extraction of the precious metal
by intimately mixing or incorporating anhydrous carbon,
in the form of powdered charcoal, with the concentrated
ore before heating it; and when the ore does not
contain a considerable amount of sulphur, we have
ascertained that the addition of quantities of 10 to 20
pounds to the concentrated ore and pulverized of 10 to 15
has considerably improved the extraction.

We have also discovered, in the case of ores containing iron pyrites, that by treating the resultant mass, whilst still hot, with a solution of common salt (sodium chloride) and in the case of ores containing copper pyrites with a solution of sal-ammoniac (ammonium chloride) the process is thereby rendered more satisfactory and complete.

In carrying out the invention the ore is first reduced in any suitable manner to the requisite degree of fineness and concentrated by any suitable means to separate therefrom the pyritic or refractory matter for treatment. The concentrated ore is thereafter dried in any convenient manner.

The now dry concentrated ore is placed in a suitable vessel or receptacle, which is thereupon closed. The closed vessel or receptacle, is then placed in a furnace, or otherwise heated until its entire contents are brought to a bright red heat. The temperature attained must not be sufficient at any time to melt the charge in the vessel or receptacle. The vessel or receptacle is closed so as to confine therein, as far as is practicable, the volatile products or gases produced, in order to retain the same in contact with the material, and also to completely exclude atmospheric air. The closed vessel or receptacle is allowed to remain in the furnace for a period of 48 (forty-eight) hours more or less.

After the expiration of this period the vessel or receptacle is taken out of the furnace and the residue of the charge removed therefrom, and treated in order to extract its gold contents in any suitable manner.

We have also discovered, in the case of the above-mentioned substances, that by treating them with a solution of sodium chloride (sodium chloride) and in the case of these compounds, a reaction with a solution of sodium chloride (sodium chloride) the process is thereby rendered more satisfactory and complete.

In carrying out the invention the first step is to reduce in any suitable manner to the required degree of fineness and comminution any solid material to be separated therefrom the particles or fragments of which are to be separated. The concentrated ore is then treated in any convenient manner.

The now dry concentrated ore is placed in a suitable vessel or receptacle, which is then closed. The closed vessel or receptacle, which is then closed, is then placed in a furnace, or otherwise heated until the entire contents are brought to a bright red heat. The temperature attained must not be sufficient at any time to cause the change in the vessel or receptacle. The vessel or receptacle is closed so as to confine therein, as far as is practicable, the volatile products or gases produced, in order to retain the same in contact with the material, and also to completely exclude atmospheric air. The closed vessel or receptacle is allowed to remain in the furnace for a period of 48 (forty-eight) hours more or less.

After the expiration of this period the vessel or receptacle is taken out of the furnace and the residue of the charge removed therefrom, and treated in order to extract the gold contained in any suitable manner.

As has been previously explained, we have discovered that the efficacy of the process is increased, and the subsequent treatment of the residue to recover its gold contents is facilitated in the case of ore containing iron pyrites by treating the residue or mass after it has been removed from the vessel or receptacle with a solution of common salt (sodium chloride) and in the case of ore containing copper pyrites with a solution of sal-ammoniac (ammonium chloride), the mass or residue being treated therewith whilst it is sufficiently hot to evaporate said solution to dryness. The treatment of the residue with either of the aforesaid solutions may be effected by sprinkling the solution upon the mass.

The mass can now be treated for the recovery of its gold contents in any ordinary manner. It will now be found amenable to the ordinary processes for recovering gold from free-milling ores; that is to say, it can be reduced, and the free gold be recovered by amalgamation and or by the cyanide or other process of extracting gold from its ores.

Any portion of the charge which is found to have been insufficiently treated in the vessel or receptacle can be replaced therein for further treatment.

The solution of sodium chloride is made by adding approximately 10 (ten) pounds of salt to 50 (fifty) gallons of water, and the solution of sal-ammoniac (ammonium chloride) by adding 5 (five) pounds of sal-ammoniac to 50 (fifty) gallons of water; but these quantities may require to be varied according to the nature of the ore under treatment.

As has been previously explained, we have discussed the
the efficacy of the process as indicated, and the
subsequent treatment of the residue to recover the gold
contents as facilitated in the case of one containing
from pyrite by treating the residue or mass with a
has been removed from the vessel or receptacle with a
solution of common salt (sodium chloride) and in the case
of one containing copper pyrite with a solution of
sulfuric acid (ammonium chloride), the mass or residue
being treated therewith while it is sufficiently hot
to evaporate said solution to dryness. The treatment
of the residue with either of the aforesaid solutions
may be effected by sprinkling the solution upon the
mass.

The mass can now be treated for the recovery of
the gold contents in any ordinary manner. It will not
be found amenable to the ordinary processes for recovering
gold from free-milling ores; that is to say, it can
be roasted, and the free gold be recovered by amalgamation
and or by the cyanide or other process of extracting
gold from the ores.

Any portion of the charge which is found to have
been insufficiently treated in the vessel or receptacle
can be replaced therein for further treatment.

The solution of sodium chloride is made by adding
approximately 10 (ten) pounds of salt to 50 (fifty)
gallons of water, and the solution of sulfuric acid
(ammonium chloride) by adding 2 (two) pounds of salt
ammoniac to 50 (fifty) gallons of water; and these
quantities may require to be varied according to the
nature of the ore under treatment.

When the ore is of such a nature as to render it desirable to mix charcoal with it before heating it- which will usually be determined by experiment- then the charcoal in a powdered form is used in a suitable quantity and intimately mixed or incorporated with the dry concentrated ore. The concentrated ore and powdered charcoal having been thoroughly mixed, the admixture is then placed in the vessel or receptacle, the latter then closed and placed in the furnace and the process carried out in the manner hereinbefore explained.

If the ore is found by experiment not to contain sufficient sulphur for its most effective treatment, then powdered sulphur in suitable quantity is thoroughly mixed with the concentrated ore and powdered charcoal, and the admixture thereafter placed in the vessel or receptacle and the latter then closed and the process completed in the manner previously explained,

In the experiments we have carried out we have obtained the best results by using for each ton of the concentrated ore 80 (eighty) pounds of sulphur and 80 (eighty) pounds of charcoal, but, obviously, these quantities may require to be altered to suit the particular ore to be treated.

Although we describe the use of a closed vessel or receptacle for holding the charge to be treated, it is evident that when the concentrated ore is to be treated in large quantities it can be heated in a closed oven or retort and the vessel or receptacle be dispensed with.

The vessel or receptacle, or the oven or retort,

When the ore is of such a nature as to require to be crushed to mix charcoal with it before being placed in the vessel, the amount of charcoal to be added will usually be determined by experiment. The charcoal in a powdered form is used in a definite quantity and intimately mixed or incorporated with the dry concentrated ore. The concentrated ore and charcoal having been thoroughly mixed, the mixture is then placed in the vessel or receptacle, the latter then closed and placed in the furnace and the process carried out in the manner previously explained.

If the ore is found by experiment not to contain sufficient sulphur for the most effective treatment, then powdered sulphur is added to the mixture in a definite quantity and the concentrated ore and powdered charcoal, and the admixture placed in the vessel or receptacle and the latter then closed and the process completed in the manner previously explained.

In the experiments we have carried out we have obtained the best results by using for each ton of the concentrated ore 80 (eighty) pounds of sulphur and 10 (ten) pounds of charcoal, but, obviously, these quantities may require to be altered to suit the particular ore to be treated.

Although we describe the use of a closed vessel or receptacle for holding the charge to be treated, it is evident that when the concentrated ore is to be treated in large quantities it can be heated in a closed oven or retort and the vessel or receptacle be dispensed with.

The vessel or receptacle, or the oven or retort,

may be provided with a non-return valve or equivalent device which, whilst permitting the gases or volatile products therein produced to escape after a predetermined safe working pressure has been attained within the vessel receptacle, oven or retort, will prevent the ingress thereinto of atmospheric air.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. The process for extracting gold from refractory ores which consists in heating the ore in such a manner as to maintain the volatile products or gases thereby produced in contact with the ore and to completely exclude atmospheric air, substantially as described.
2. The process for extracting gold from refractory ores as claimed in claim 1, in which amorphous carbon in the form of powdered charcoal is mixed with the ore before it is heated, substantially as described.
3. The process for extracting gold from refractory ores as claimed in claim 1 or claim 2, in which powdered sulphur is mixed with the ore or ore and charcoal, substantially as described.
4. The process for extracting gold from refractory ores, as claimed in claim 1, 2 or 3, in which the resultant mass whilst still hot is treated with a solution of sodium chloride or ammonium chloride, substantially as described.
5. The process for extracting gold from refractory ores, which consists in reducing the ore if necessary and concentrating the reduced ore to separate therefrom the pyritic or refractory matter for treatment, then drying said matter, then adding powdered sulphur and powdered charcoal to the matter and intimately mixing the same therewith, then heating the admixture to a bright red heat in such a manner as to maintain the volatile products or gases thereby produced in contact with the material and to completely exclude atmospheric air, then treating the resultant mass whilst still hot with a solution of sodium chloride or ammonium chloride in which the various substances are used in substantially the proportions hereinbefore specified.

may be provided with a non-ferrous wire or equivalent device which, whilst permitting the passage of volatile products therefrom, prevents escape from a pressure-tight vessel. The working pressure has been determined within the vessel, respectively, even in cases, when, during the process, the volume of atmospheric air.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, we declare that what is claimed is:-

1. The process for extracting gold from refractory ores which consists in heating the ore in such a manner as to maintain the volatile products in gaseous form, produced in contact with the ore and to completely exclude atmospheric air, substantially as described.

2. The process for extracting gold from refractory ores as claimed in claim 1, in which atmospheric carbon in the form of powdered charcoal is mixed with the ore before it is heated, substantially as described.

3. The process for extracting gold from refractory ores as claimed in claim 1 or claim 2, in which powdered charcoal is mixed with the ore or one of the products, substantially as described.

4. The process for extracting gold from refractory ores, as claimed in claim 1, 2 or 3, in which the refractory mass whilst still hot is treated with a solution of sodium chloride or ammonium chloride, substantially as described.

5. The process for extracting gold from refractory ores, which consists in reducing the ore if necessary and concentrating the reduced ore to separate therefrom the pyritic or stibnic matter for treatment, then drying said matter, then adding powdered sulphur and powdered charcoal to the matter and intimately mixing the same therewith, then heating the admixture to a bright red heat in such a manner as to maintain the volatile products in gaseous form, produced in contact with the ore and to completely exclude atmospheric air, when treating the refractory mass whilst still hot with a solution of sodium chloride or ammonium chloride in which the various substances are used in substantially the same proportions as specified.

6. The process for extracting gold from refractory
ores substantially as hereinbefore described.^e

Dated this nith day of February, 1911.

Robert Davy

Frederick Davy.

John David MacKenzie

Edmund Stanhope Rees

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COUPON. The remitter may write here any communication to the payee.

Rs. 30 As. —

De Penning & De Penning Remitter.

Fee on Specimen Rs 30

Letter & papers under separate cover registered

CA

To Mr V

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5-11-12

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MYSORE GOVT. GEN. & REV. SECRETARIAT,

No. G. 26/4

Dated Bangalore, 16th Nov.....1902.

G. M. 254-10-17

NOTIFICATION.

(PATENT.)

The following specification of an invention has been filed in accordance with Sections 8, 9, 10 and 11 of Regulation XI of 1894 (The Inventions and Designs Regulations) and is open to inspection at the Mysore Government Secretariat on application to the Secretary to the Government of His Highness the Maharaja of Mysore, General and Revenue Departments, and on payment of a fee of one Rupee.

By Robert Davy of Natal Spruit, near Johannesburg/Transvaal,
Chemist, Frederick Davy of Natal Spruit aforesaid, ^{Smelter} ~~Speculator~~,
John David Mackenzie of 50, Garden Street, Rosettenville near
Johannesburg aforesaid, Speculator, and Clement Stanhope Bexham
of Ampthill Avenue, Benoni, Transvaal, Managing Director.

" An improved process for extracting
gold from refractory ores."

By Order,

12.11.12
For offe Secretary.

To

The Compiler Mysore Gazette, for publication.

VS. 41

No. G. 2616

G.M. 254-10-18

MYSORE GOVT. GEN. & REV. SECRETARIAT,

Dated Bangalore, 16 Nov 1902.

From

The Secretary to the Government of H.H. the Maharaja of Mysore,
General and Revenue Departments.

To

Messrs De Penning and De Penning,
5, Commercial Buildings, Clive Street
Calcutta

Sir,

With reference to your letter dated the 31st Oct. 1912 I am directed to forward copy of a Notification No. 6 /G.M. 254-10- dated Nov. 1912 issued by this Government in regard to the invention filed by you under Regulation XI of 1894 (The Inventions and Designs Regulations.) and request that the same may be communicated to the parties concerned.

The order granting permission to file specification is herewith returned, with the certificate at foot, duly filled in and signed.

I have the honor to be,

Sir,

Your most obedient servant,

86h)

12.11.12
For the Secretary.

VS. 41

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The Deputy Commissioner
Treasury Deptt, Bangalore

Dated

Despatched 16th Nov. 1912

Received

General No. G. 2616

No. G. m. 254-10-19
Enclosure No. with Rs 30.

Has the honor to forward
herewith a sum of Rs. 30/- received
from Messrs De Penning & De Penning,
Calcutta, being the fee payable
under cl 2 of Schedule IV of the
Mysore Inventions and Designs
Regulation No. 71 of 1894 for filing
a specification of an invention
for "An Improved Process for
extracting gold from refractory ores"
by Messrs Robert Davy, Fred. Davy,
John David Mackenzie and C. S.
Bertram, and to request the
favor of an acknowledgment
for the receipt of the amount.

By order,

G.P.B. 20,000-21-10-10.

For the Secretary

12.11.12

125.41

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To (1) The State Geologist.
(2) " Supdt, Govt Museum.
(3) " Chief Engineer.

Dated

Despatched 16th November 1912.

Received

General No. G. 2617-9
No. G. M. 254-10-20.
Enclosure No.

Has the honor to forward
herewith for record in his office
copy of a specification of an
invention for "An improved
process for extracting gold from
refractory ores" by Messrs Robert
Davy, Fred. Davy, John David
Mackenzie and C. S. Bertram,
and to request the favor of an
acknowledgment

By order

[Signature]
12.11.12
For His Secretary
[Signature]
V.S. 41

G.A.
M.G.D. 13]

81
MYSORE GEOLOGICAL DEPARTMENT,
DATED BANGALORE, 19 November 1912.

No. 1182

DIARY No. 2662

From

DR. W. F. SMEETH, M.A., D.Sc., A.R.S.M., etc.,

State Geologist in Mysore

1912-1913
SECTION for: mis
FILE No. 254 of 1910-11
SERIAL No. 21

To

K.R. Srinivasalingar, Esquire, M.A.,

Offg. Secretary to the Government of His Highness
the Maharaja of Mysore, Gen. & Rev. Depts.

Sir,

I have the honour to acknowledge the receipt of
a copy of a specification of an invention for "An improved
process for extracting gold from refractory ores" by Messrs.
Robert Davy, Fred Davy, John David Mackenzie and C.S. Bertram,
forwarded for record in this office with your docket No. G.
2617-19/G.M.254-10-20, dated 16th November 1912.

I have the honour to be,

Sir,

Your most obedient servant,

C.N.

H. Subbarayan
for State geologist in Mysore.
for

No. 147

OFFICE OF ECONOMIC BOTANIST,
SUPERINTENDENT, MYSORE GOVERNMENT MUSEUM,

Bangalore, dated 21st November 1912.

FROM

G. H. KRUMBIEGEL, Esq., F.R.H.S.,
Economic Botanist,
Superintendent, Mysore Govt. Museum,
Bangalore.

To

DIARY No. 2702

1912-1913
SECTION for: mis
FILE No. 254 of 1910-11
Ser. 1-1-22

The Secretary, to the Govt. of S. S. The
Maharaja of Mysore
Gen. and Rev. Depts.
Bangalore

I have the honor to acknowledge the receipt of a copy of the Specification of an Invention for "An Improved Process for extracting gold from refractory ores" by Messrs. Robert Davy, Fred Davy, John David Mackenzie and C. S. Bertram, forwarded with your No. G. 2617-19, dated the 16th instant.

I have the honor to be,
Sir,
Your most obedient servant,

G. H. Krumbiegel

Economic Botanist,
Superintendent, Mysore Govt. Museum,
BANGALORE.

V
22/11/12 GA
From

1912-13

G. H. KRUMBIEGEL, Esq., F.R.H.S.,

Economic Botanist,

Supt., Mysore Govt. Museum,

To *Bangalore.*

*The Secretary to the Govt.
of H. H. the Maharaja
of Mysore
Gen. & Rev. Secy.*

Dated }
Despatched } 21st Nov. 1912

Received

General No. 14
No.

Enclosure No. . .

*Acknowledging the receipt
a copy of the Specification
of an Invention for "im-
proved process for —
extracting gold from —
Refractory Ores" by Messrs
R. Davy, F. Davy, J. D. Mackay
and C. S. Burtram*

..No. 2832

No. 9611

1012-1013
Gen: mis
237 of 1911-12
23

Mysore P. W. Department,

Central Office,

Dated Bangalore, 26th November 1912.

From

The Chief Engineer of Mysore,
Bangalore.

To

K.R.Srinivasiengar, Esq., M.A.,
Offg. Secretary to the Government of
His Highness the Maharaja of Mysore,
General and Revenue Departments.

Sir,

I have the honour to acknowledge the receipt of a copy of
specification of an invention for "Improvements in apparatus for - -
electro-chemical treatment of ores" by the Bubola Syndicate Ltd., of
New Stock Exchange Buildings, Johannesburg, Transvaal, forwarded with
your No.G.2594-6/G.M.237-11-17 dated the 15th November 1912.

I have the honour to be,

Sir,

Your most obedient servant,


Deputy Chief Engineer of Mysore.

B.V.

V 23/11/12 GA
1912-13.

No. 9611

From

The Chief Engineer of Mysore,
Bangalore.

To

The Secretary to Government,
General & Revenue Departments.

Dated Bangalore, 26th November 1912.

Despatched

Enclosure No.

SUBJECT.

Acknowledging the receipt of a
copy of specification of an invention
for "Improvement in apparatus for electro-
chemical treatment of ores".

30657

2012-1913

SECTION for: Mus

FILE NO.

25406 1910-11

24

40

Book No. 1041

Rs. 30/-

No. 85 ¹²⁶

Bangalore Treasury dated 11-12-12

Received from Secretary to the Govt of Mysore, General Revenue

Poupees Thirty of

Annas and Pies being on account of

for the bill of specification of an invention

under his order No. 4616 dated 16-11-12

on 19-11-12 S.R. 254-10-19

H. N. Narasimham

In charge of Treasury

Bangalore